

REMARKS

The Office Action mailed May 30, 2006 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-17 and 19-21 are now pending in this application. Claims 1-15 stand rejected. Claim 18 has been canceled. Claims 16, 17, and 19-21 have been allowed.

In accordance with 37 C.F.R. 1.136(a), a three month extension of time is submitted herewith to extend the due date of the response to the Office Action dated May 30, 2006, for the above-identified patent application from August 30, 2006, through and including November 13, 2006. In accordance with 37 C.F.R. 1.17(a)(3), authorization to charge a deposit account in the amount of \$1020.00 to cover this extension of time request also is submitted herewith.

The rejection of Claims 1, 3-6, and 8 under 35 U.S.C. § 103 as being unpatentable over Wyss (European Patent Application EP 0 726 348 (“Wyss”) is respectfully traversed.

Wyss describes a method of making a filter medium. The method includes providing, singeing, and calendering a porous substrate. The method also includes providing a polyimide rigidizing film forming material. Wyss describes that the rigidizing film forming material may include compositions that include polyamideimide (PAI) solutions containing 18.7% solids, 7.7% solids, or 7% solids (shown in Table 1 of Wyss) in addition to water, furfuryl alcohol, and n-methyl pyrrolidone. After the porous substrate is impregnated with a PAI solution, Wyss describes that impregnated substrate is baked at 300°C, and then pleated at reduced temperatures of between 200°C and 250°C. Notably, Wyss does not describe or suggest diluting the PAI solution to approximately 5.5% solids.

Claim 1 recites a method of making a filter medium for use in a filtering application at an application temperature, the method including “providing a substrate; providing a polyimide stiffening agent in solution; diluting the polyimide stiffening agent solution to approximately 5.5% solids; treating the substrate with the polyimide stiffening agent solution; and curing the treated substrate, wherein the treated substrate with the polyimide stiffening

agent is capable of withstanding at least 100,000 cleaning pulses at a temperature of about 375°F, a flowrate of about 1200 cubic feet per minute, and a pressure of about 60psi.”

Wyss does not describe or suggest a method of making a filter medium as recited in Claim 1. More specifically, Wyss does not describe or suggest a method including diluting a polyimide stiffening agent solution to approximately 5.5% solids, as required by Applicant’s claimed invention. Rather, in contrast to the present invention, Wyss describes a method including providing polyamideimide (PAI) solutions containing 18.7% solids, 7.7% solids, or 7% solids and impregnating a porous substrate with compositions that includes one of the PAI solutions.

As described in Applicant’s specification at paragraph [0036], “[t]he polyimide resins provide sufficient stiffness at lower weight pick ups primarily due to the following: First, the polyimide resin is in solution, rather than an emulsion or dispersion. This allows a thinner, more uniform impregnation of the substrate with the polyimide resin.” As described in Applicant’s specification at paragraphs [0043] and [0048], the “resin solution was diluted to 5.5% solids. The felt was immersed in the resin and the excess removed by nip rollers to produce a 6% to 7% pickup after first pass.” Due to a high glass transition temperature (Tg) of polyimides, a temperature during pleating of a treated substrate may be raised as compared to a temperature of drying the treated substrate. Wyss does not describe or suggest such features. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Wyss.

Claims 3-6 and 8 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 3-6 and 8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 3-6 and 8 likewise are patentable over Wyss.

For at least the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 1, 3-6, and 8 be withdrawn.

The rejection of Claims 2 and 9-15 under 35 U.S.C. § 103 as being unpatentable over Wyss in view of Fukata (U.S. Patent 4,454,189) (“Fukata”) or Nakahara (European Patent Application EP 1 096 057) (“Nakahara”) is respectfully traversed.

Wyss is described above.

Fukata describes a process for producing sheets of polyphenylene sulfide filaments including a calendering step. Notably, Fukata does not describe or suggest diluting a synthetic resin solution to approximately 5.5% solids.

Nakahara describes a method of making a filter including polyphenylene sulfide fibers and a synthetic resin. The method includes a calendaring step. Notably, Nakahara does not describe or suggest impregnating the filter in a synthetic resin solution that is diluted to approximately 5.5% solids.

Applicant respectfully submits that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Wyss, Fukata, and Nakahara, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicant respectfully submits that it would not be obvious to one skilled in the art to combine Wyss with either Fukata or Nakahara because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant’s own teaching.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levingood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants’ disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant’s disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected in an attempt to arrive at the claimed invention. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicant requests that the Section 103 rejection be withdrawn.

Claim 1 is recited above. None of Wyss, Fukata and Nakahara, considered alone or in combination, describe or suggest a method of making a filter medium as recited in Claim 1. More specifically, Wyss does not describe or suggest a method including diluting a polyimide stiffening agent solution to approximately 5.5% solids, as required by Applicant's claimed invention. Rather, in contrast to the present invention, Wyss describes a method including providing polyamideimide (PAI) solutions containing 18.7% solids, 7.7% solids, or 7% solids and impregnating a porous substrate with compositions that includes one of the PAI solutions, Fukata describes a process for producing sheets of polyphenylene sulfide filaments including a calendering step, and Nakahara describes a method of making a filter including polyphenylene sulfide fibers and a synthetic resin. Accordingly, for at least the reasons set forth above, Claim 1 is submitted to be patentable over Wyss in view of Fukata or Nakahara.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicant submits that dependent Claim 2 likewise is patentable over Wyss in view of Fukata or Nakahara.

Claim 9 recites a method of making a filter medium for use in a filtering application at an application temperature, the method including “providing a polymer substrate; calendering the polymer substrate; providing a polyimide stiffening agent in solution; diluting the polyimide stiffening agent solution to approximately 5.5% solids; treating the calendered polymer substrate with the polyimide stiffening agent solution; and curing the treated polymer substrate, wherein the treated polymer substrate with the polyimide stiffening agent is capable of withstanding at least 100,000 cleaning pulses at a temperature of about 375°F, a flowrate of about 1200 cubic feet per minute, and a pressure of about 60psi.”

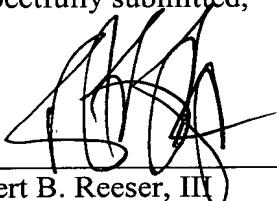
None of Wyss, Fukata and Nakahara, considered alone or in combination, describe or suggest a method of making a filter medium as recited in Claim 9. More specifically, Wyss does not describe or suggest a method including diluting a polyimide stiffening agent solution to approximately 5.5% solids, as required by Applicant’s claimed invention. Rather, in contrast to the present invention, Wyss describes a method including providing polyamideimide (PAI) solutions containing 18.7% solids, 7.7% solids, or 7% solids and impregnating a porous substrate with compositions that includes one of the PAI solutions, Fukata describes a process for producing sheets of polyphenylene sulfide filaments including a calendering step, and Nakahara describes a method of making a filter including polyphenylene sulfide fibers and a synthetic resin. Accordingly, for at least the reasons set forth above, Claim 9 is submitted to be patentable over Wyss in view of Fukata or Nakahara.

Claims 10-15 depend from independent Claim 9. When the recitations of Claims 10-15 are considered in combination with the recitations of Claim 9, Applicant submits that dependent Claims 10-15 likewise are patentable over Wyss in view of Fukata or Nakahara.

For at least the reasons set forth above, Applicant respectfully requests that the Section 103 rejection of Claims 2 and 9-15 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,



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